

## REMARKS

In the Office Action mailed September 19, 2007, the Examiner rejected claims 20-37. By way of the foregoing amendments and the markings to show changes claims 1-34 are cancelled, claims 35-36 are currently amended, and claims 38-54 are new. Claims 35-54 are currently pending. The foregoing amendments are taken in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicant would otherwise be entitled in view of the prior art.

Further, by the present amendment, it does not follow that the amended claims have become so perfect in their description that no one could devise an equivalent. After amendment, as before, limitations in the ability to describe the present invention in language in the patent claims naturally prevent the Applicants from capturing every nuance of the invention or describing with complete precision the range of its novelty or every possible equivalent. See, Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 62 USPQ2d 1705 (2002). Accordingly, the foregoing amendments are made specifically in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicants would otherwise be entitled.

### I. Claim Amendments and New Claims

Applicant amended claims 35-36 and added new claim 38-54. No new matter has been added. Support for the claim amendments and the new claims is found throughout U.S. Patent Application Publication No. 2006/0237159. More specifically, support is found in paragraphs 0025, 0033, 0034, 0040, 0043, 0048, and 0049.

### II. Claim Rejection – 35 U.S.C. § 103

Claims 20-37 were rejected on September 19, 2007 in a final office action and claims 35-37 were rejected on December 17, 2008 in an Examiner's answer. Applicant traverses the rejections for the reasons stated herein.

Applicant does not believe that the office action has performed fact finding as to every element of the claimed invention. Specifically, no fact finding has been performed for claims 35-42, which state, "selectively applying an aqueous solvent via a droplet generator to a cross-sectional area of the metal casting mould being generated, in a sufficient dose so that the sand is bound by the salt-crystal and protein combination without impairing the outline and accuracy

of the metal casting mould on the assembly field of the assembly platform." The office action has not performed fact finding as to step (d) of claim 35 which states, "dissolving the salt-crystal and protein combination with the aqueous solvent, so that the salt-crystal and protein combination substantially encompasses the sand particles within a layer and any underlying sand particles that may be present." Furthermore, the Examiner admitted in the Examiner's answer on pages 4-5 that Melling does not teach a salt-crystal and protein combination." Claim 35 has been amended so that the only binder combination remaining is a salt-crystal and protein combination. Thus, the office action and Examiner's Answer has not performed fact finding as to his element of the claimed invention.

The office action has not performed any fact finding as to claims 38 and 54, which state, "wherein the salt-crystal and protein combination comprises 3 percent by weight water before the salt-crystal and protein combination is applied to the assembly platform." The office action has not performed fact finding as to claims 39 and 51, which state, "wherein the step of removing begins after a sufficient amount of reaction time has elapsed."

The office action has not performed any fact finding as to claim 47, which states, "wherein the solvent is applied by screen printing or spraying through a template."

Under *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007) in light of *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), Applicants believe that a proper 35 U.S.C. § 103 rejection was not made. Although the teaching-suggestion-motivation (TSM) test requirements as applied in *KSR* have been altered to be applied in a less rigid manner, no explanation has been made showing the reasoning to combine Melling and Sachs. It is even believed that the facts as alleged in the office action would teach away from and discourage the combination of Melling and Sachs. The Court in *KSR* said:

Often, it will be necessary...to look to interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an **apparent reason** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis **should be made explicit**.

*KSR*, 82 USPQ2d at 1395 (emphasis added). Even under *KSR* where the TSM test is applied less rigidly: (1) these two cited references as discussed by the office action are in dispute with each other, (2) there is no TSM to combine them, (3) there was no apparent reason to combine the elements, and (4) no explicit analysis was made. Furthermore, the office action has not

provided any reasoning why one skilled in the art would look to the teachings of Sachs to modify Melling. For example on page 4 (copied below) of the Examiner's Answer the Examiner seems to suggest that Melling should be modified so that the binder material of Melling is applied in a separate step than the sand material.

Melling et al. fail to teach the use of a powder dispensing apparatus including an assembly platform. However, Sachs (col. 4, lines 49+) teach the use of a powder dispensing apparatus including an assembly and method for producing a mold for casting molten metal, comprising: dispensing layers of powder (sand) on an assembly platform (moveable support surface) and bonding together successive layers of porous material (sand) with droplets of a binder material including the use of drying techniques including microwave for removing liquid (col. 6, lines 31+) for the purpose of shortening the cycle time of making a prototyping mold (Sachs; col. 1, lines 47+).

Additionally, no facts were presented as to where either reference has an additional step of selectively applying a solvent to the bonding agent/sand admixture. Applicant invites the Examiner to provide an explicit analysis of how the two references are combined to arrive at the present invention and to prove some apparent reasoning as to how the elements have been combined to allegedly arrive at the claimed invention. Without providing these facts and this analysis Applicant does not believe that a proper *prima facie* obviousness rejection has been presented and Applicant respectfully request that the rejection be withdrawn.

**CONCLUSIONS**

In view of Applicants' amendments and remarks, the Examiner's rejections are believed to be rendered moot. Accordingly, Applicants submit that the present application is in condition for allowance and requests that the Examiner pass the case to issue at the earliest convenience. Should the Examiner have any question or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned at (248) 292-2920.

If for some reason Applicant has not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent the abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge our Deposit Account No. 50-1097 for any fee which may be due.

Respectfully submitted,

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